

W/O: 77021		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3488-041 PAR # 12 Fault Category: Machining NCR: Yes No QA: Start Date: 12/1/25
12-1142 Resolution: W/O - as is Disposition: W/O as is QA: N/C Closed: OK Date: 12/1/25

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
11.12.20	100	Chatter mark on inside diameter: $\approx 1'' - 2''$ from fwd end. Re. Process	GP 11.12.20 OS/042	Marks buffed out. Not high stress area. Acceptable	S 11/12/20	11/12/20	GP 11.12.20 OS/042	S 11/12/20

NOTE: Date & initial all entries

Work Order ID 77021

77021

Page 2

Thursday, November 24, 2011 3:22:46 PM

Item ID: D3488-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Blade Fitting Assembly, LH
 Start Date: 11/24/2011 Start Qty: 12.00 ***12*** Cust Item ID:
 Required Date: 12/5/2011 Req'd Qty: 12.00 ***12*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00		<i>FK- 11/12/16.</i>		<u>12.</u>			
140 *140* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00		<i>SL 11-12-20</i>					
150 *150* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.00		<i>BT 11-12-21</i>		<u>(12)</u>			

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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

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Page 3

Thursday, November 24, 2011 3:22:46 PM

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 Start Date: 11/24/2011 Start Qty: 12.00 ***12*** Cust Item ID:
 Required Date: 12/5/2011 Req'd Qty: 12.00 ***12*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
160									
Powdercoat		0.00							
Powder Coating									
	Memo								
	START TIME: 9:30								
	FINISH TIME: 10:00								
170	QC3- Inspect Part Finish	0.00							
170									
QC		0.00							
Quality Control	Memo								
180	HandFinishing	0.00							
180									
HandFinish		0.00							
Hand Finishing	Memo								
	Install Inserts as per Dwg D3488								

12x d M / 11/12/22

12x d M 12/01/23

12x d M 12/01/23

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

Work Order ID 77021

77021

Page 4

Thursday, November 24, 2011 3:22:46 PM

Item ID: D3488-041 Accept ***N900040100*** Setup Start ***NS1***
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 Item Name: Blade Fitting Assembly, LH
 Start Date: 11/24/2011 Start Qty: 12.00 ***12*** Cust Item ID:
 Required Date: 12/5/2011 Req'd Qty: 12.00 ***12*** Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190 *190* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				(X12)			
200 *200* Packaging Packaging	Identify as per dwg & Stock Location: <u>FP-2</u> Memo	0.00 0.00				X 12 count	0	12/1/23	
210 *210* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00						12/1/23	

12/20/23
62

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Picklist Print

Page 1

Thursday, November 24, 2011 3:22:51 PM

Work Order ID: 77021

77021

Parent Item: D3488-041

D3488-041

Parent Item Name: Blade Fitting Assembly, LH

Start Date: 11/24/2011

Required Date: 12/5/2011

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP Rev:A New Issue 06-02-28 JLM
IPP Rev:B As per Rev B 06-03-30 JLM
IPP Rev:C Now On Doosan Lathe JLM Verified BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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ALS7-1032-225

Purchased

No

Each

1,162.000

48

AI S7-1032-225

INSERT

ALS4-1032-225

**

M 11038 & 49 M 12/01/13

Location

Loc Qty

Loc Code

ST282

1162

100896

135

111529

27

118520

1000

D6103-003

Manufactured

No

Each

15.0000

12

D6103-003

Round Billet, Aluminum

**

10/12/11

Location

Loc Qty

Loc Code

MAT043

15

75066

15

76982

4
8
15

only 3 in system?
can't pull from stock

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	7702/
Description: Blade Fitting, LH / Turning Detail for D3488-1/-2		Part Number:	D3488-1
Inspection Dwg: D3488 / DSK101 Rev: B / D		Page 1 of 2	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
Ø2.150	+/-0.005	2.145	/			
Ø2.780	+/-0.005	2.777	/			
Ø3.125	+/-0.010	3.123	/			
Ø3.346	+/-0.010	Ø3.346	/			
0.125 x 45°	+/-0.010 x +/-0.1°	.125 x 45°	/			
8.000	+0.030/-0.000	8.003	/			
9.250	+/-0.010	9.250	/			
0.188	+/-0.010	.188	/			
R0.032	+/-0.010	R0.032	/			
R0.062	+/-0.010	R0.062	/			
Ø0.297	+0.005/-0.001	Ø0.2975	/			
Ø0.430	+/-0.010	Ø0.434	/			
0.100	+/-0.010	.100	/			
0.125	+/-0.010	.132	/			
2.620	+/-0.010	2.620	/			
3.500	+/-0.010	3.500	/			
1.005	+/-0.010	1.005	/			
Ø0.484	+0.005/-0.001	Ø0.485	/			
1.180	+/-0.010	1.180	/			
3.150	+/-0.010	3.150	/			
3.070	+/-0.010	3.069	/			
R0.063	+/-0.010	R0.063	/			

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	17021
Description: Blade Fitting, LH / Turning Detail for D3488-1/-2		Part Number:	D3488-1
Inspection Dwg: D3488 / DSK101 Rev: B / D		Page 2 of 2	

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Milling Section						
Ø0.508	+0.006/-0.001	0.5085	✓		FK-04	Vern.
0.750	+/-0.010	0.752	✓		31006	Height gauge.
1.500	+/-0.010	1.500	✓		FK-04	Vern.
11.18	+/-0.030	11.174	✓		31006	Height gauge.
R0.062	+/-0.010	0.062	✓		rad gauge.	
0.125	+/-0.010	0.122	✓		FK-04	Vern.
0.590	+/-0.010	0.590	✓		31006	Height gauge.
0.793	+/-0.010	0.794	✓		"	"
1.351	+/-0.010	1.349	✓		"	"
1.317	+/-0.010	1.321	✓		FK-04	Vern.
1.802	+/-0.010	1.802	✓		31006	Height gauge.

Measured by:	FK.	Audited by:	JL	Prototype Approval:	N/A
Date:	11/12/16	Date:	11-12-20	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.03.31	New Issue	KJ/JLM	
B	08.09.19	Reformat P/O D3488-041	KJ/JLM	
C	08.12.02	Dimension 8.000 removed	KJ/JLM	

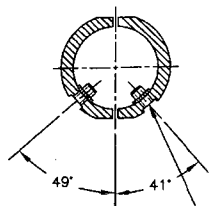
W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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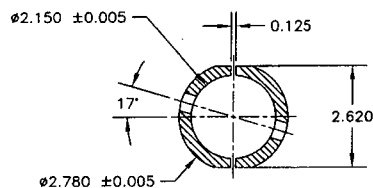
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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SECTION B-B

Ø0.297
C'BORE Ø0.430 x 0.100
INSTALL ALS4-1032-225 (OR AKS4-1032-225
OR ALS7-1032-225 OR AKS7-1032-225)
INSERTS AFTER FINISH
(4 PLACES)



SECTION A-A

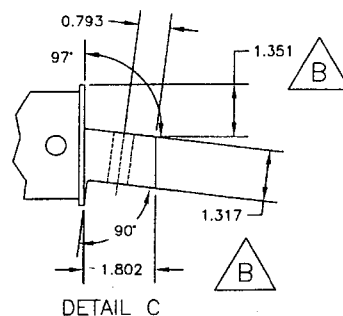
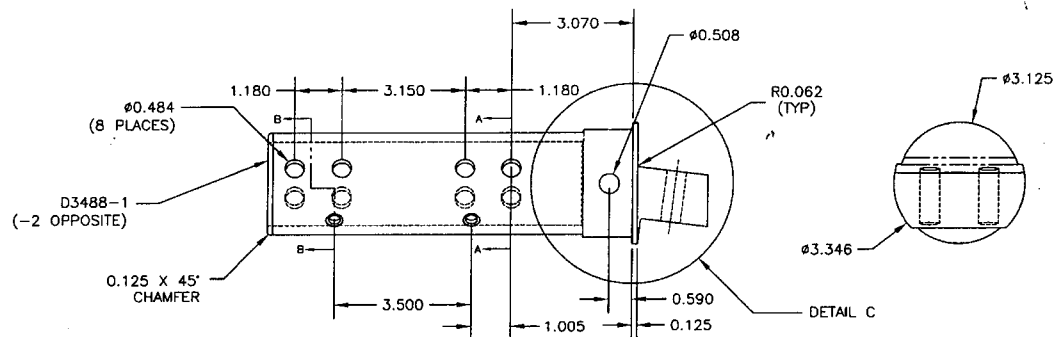
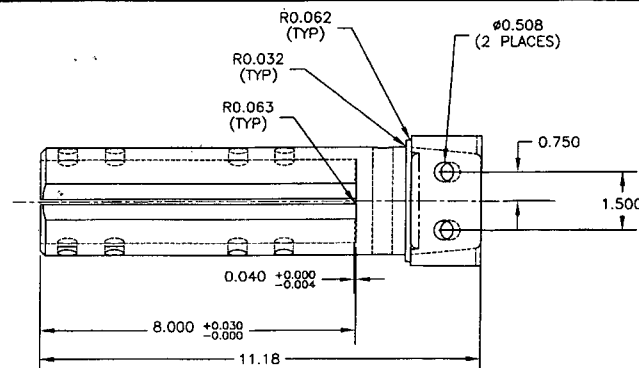
D3488-041/-042 BLADE FITTING ASSEMBLY PARTS LIST

QTY -041	QTY -042	PART NUMBER	DESCRIPTION
X		D3488-041	BLADE FITTING ASSEMBLY (LH)
	X	D3488-042	BLADE FITTING ASSEMBLY (RH)
1		D3488-1	BLADE FITTING (LH)
	1	D3488-2	BLADE FITTING (RH)
4	4	ALS4-1032-225 or AKS4-1032-225 or ALS7-1032-225 or AKS7-1032-225	INSERT

D3488-041/-042 BLADE FITTING

- MATERIAL: MAKE D3488-1/-2 FROM ALUMINUM 7075-T7351 ROUND BAR PER QQ-A-225/9 (REF. DART MATERIAL SPEC M7075T73R)
- FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1
POWDER COAT WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
- BREAK UNMARKED SHARP EDGES 0.010 TO 0.020
- INSTALL INSERTS AFTER POWDER COAT
- ALL DIMENSIONS ARE IN INCHES
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

SHOP
RETURN
ENGINEER
UNCONTROLLED
SUBJECT TO ANCHOR
WITHOUT NOTICE
WORK ORDER
NO. 77021



D3488-041 SHOWN (D3488-042 OPPOSITE)

RELEASED
06.03.15 PH
PER DS
EIN #739

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B	06.03.15	CHANGE THICKNESS
A	05.12.20	NEW ISSUE
DESIGN PH	DRAWN BY PH	DART DART AEROSPACE USA, INC. PORT HADLOCK, WA
CHECKED PH	APPROVED PH	DRAWING NO. D3488
DATE 06.03.15		TITLE BLADE FITTING
		REV. B SHEET 1 OF 1 SCALE 1:3

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries